



BEF old growth northern hardwoods. Photo by Ken Dudzik, U.S. Forest Service.

Outcomes

Understanding how site conditions (soils, glacial deposits, and bedrock type) influence what species can be feasibly regenerated and grown allows integrated silviculture/wildlife habitat research on BEF to ask the question—does size of opening matter? Patches, groups, strips and clearcut treatments maintain a diverse component of valuable species and young forest habitat for an array of early successional bird species, as well as for mature forest birds in the future. Individual-tree selection minimizes species diversity; group selection counteracts this tendency and provides an efficient way to harvest patchy stands. Recently released trees are growing at rates at least as fast as those released in 1936. Seventy years of forest overstory change have showed no evidence of environmental impacts. Natural succession is the major agent of change in northern hardwood-hemlock-red spruce stands. Time-tested silvicultural approaches remain valid for this New Hampshire forest type.

Facilities

The BEF administrative site includes office and laboratory space, a conference room, a bunkhouse and other quarters with kitchen and laundry facilities for up to 25 people.

U.S. Forest Service Experimental Forest and Range Network

Forest Service Research and Development (R&D) works at the forefront of science to improve the health and use of our nation's forests and grasslands. Research has been part of the Forest Service mission since the agency's inception. Today, Forest Service researchers work in a range of biological, physical, and social science fields; their research covers all 50 states, U.S. territories, and commonwealths. The Northern Research Station is one of six in R&D, and includes 20 states in the north-central and northeastern U.S., comprising both the most densely populated and most heavily forested portions of the country.

The Experimental Forest and Range (EFR) network contributes importantly to R&D's research infrastructure and is increasingly viewed as one of its most valued assets. There are currently 22 official experimental forests in the Northern Research Station and 80 EFRs nationwide. Taken together, these sites provide a record of forests and forest change that dates back more than 100 years. Though forest productivity, species diversity, economic management viability, and public participation/support are still important local, regional and national topics, EFRs are becoming increasingly networked to address issues of national and international concern such as climate change, carbon sequestration, air and water quality, and invasive plants and animals.

For more information about Bartlett Experimental Forest

Website:

<http://www.nrs.fs.fed.us/ef/locations/nh/bartlett/>

Contact:

Bartlett Experimental Forest
U.S. Forest Service,
Northern Research Station,
271 Mast Road
Durham, NH 03824

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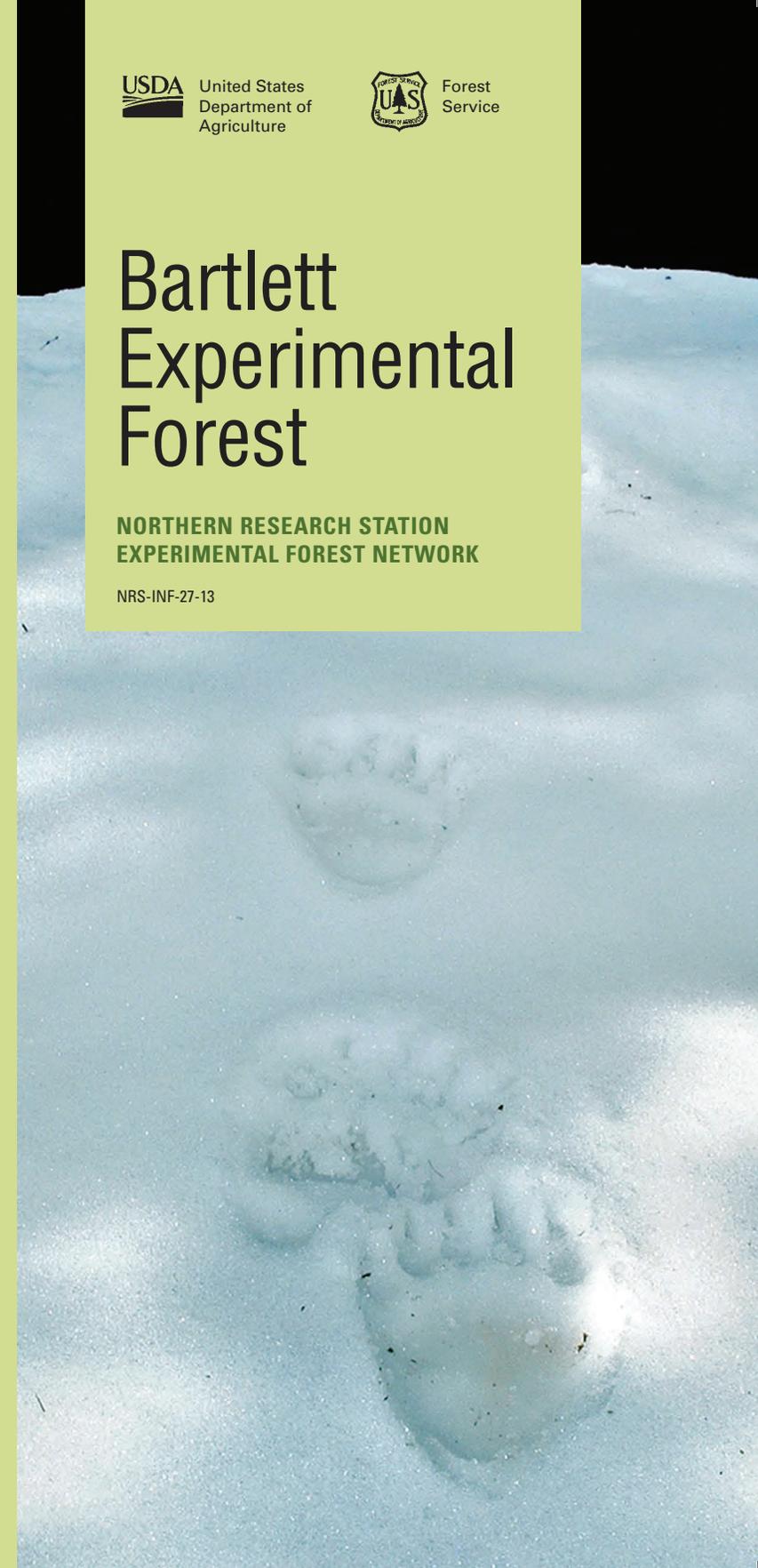
On the cover: BEF black bear tracks in the snow. Photo by Jon Janelle, U.S. Forest Service.



Bartlett Experimental Forest

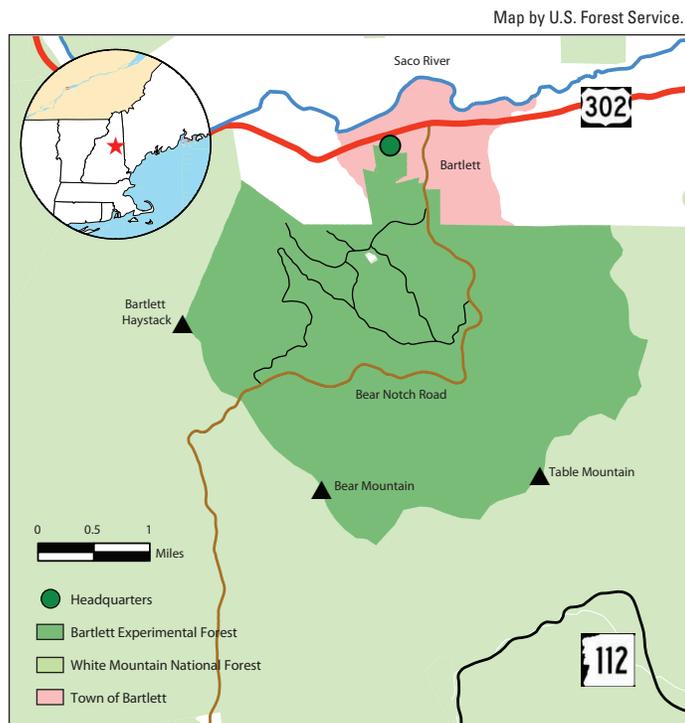
**NORTHERN RESEARCH STATION
EXPERIMENTAL FOREST NETWORK**

NRS-INF-27-13



Bartlett Experimental Forest

The Bartlett Experimental Forest (BEF) lies within the Saco Ranger District of the White Mountain National Forest (WMNF) in the town of Bartlett, NH. The original 2,600-acre forest was established in 1932 as a location to study silviculture and management of northern hardwoods. BEF was expanded in 2010 to 5,789 acres to include the upper elevations of the Bartlett watersheds. Silviculture-wildlife habitat relationships have been studied at Bartlett for more than 25 years, and since 1995 BEF has become increasingly important as a site for studies of carbon and nutrient cycling. Research at Bartlett has been instrumental in understanding how northern hardwood forests respond following silvicultural treatments and natural disturbances; and today management of northern hardwoods in New England is largely based on research conducted here.



Features

BEF lies in the White Mountain subsection of the White Mountain Section of the Adirondack-New England Coniferous Forest-Alpine Meadow Province. BEF terrain is mountainous; elevations range from 680 to 3,000 ft. Aspects are primarily north and east. BEF soils are spodosols that developed on glacial tills derived from granite and gneiss. The soils are moist but usually well drained. In places, soils are shallow; boulders and rocks are common throughout the forest. Summers are warm, daytime temperatures can sometimes hit the low 90s °F; winters are cold, temperatures can reach -20 °F. Average annual precipitation is 50 inches, distributed throughout the year. In winter, individual storms can drop more than 2 ft of snow and snow can accumulate to depths of 5 to 6 ft. The growing season averages 120 days.

- **BEF encompasses a broad range of elevations and site characteristics found in northern forest ecosystems.**
- **Common trees include beech, yellow and paper birches, sugar and red maples, bigtooth and trembling aspens, northern red oak, eastern hemlock, balsam fir, red spruce, and white pine.**
- **BEF watersheds provide drinking water to the town of Bartlett.**

Partners

Various partnerships are essential to maintain and enhance northern forest ecosystem research on BEF and include: White Mountain National Forest, Northeastern Area State and Private Forestry, New Hampshire Division of Forests and Lands, New Hampshire Fish and Game Department, New Hampshire Timberland Owners Association, University of New Hampshire, State University of New York, Dartmouth College, Plymouth State University, University of Vermont, University of Massachusetts, Hubbard Brook Research Foundation, and the town of Bartlett, among others.

Research

BEF offers a full range of silvicultural treatments including clearcuts done using whole tree harvests, shelterwoods, group/patch selection, and single-tree selection, as well as reserve, no cut compartments as research opportunities. Seventy plus years of cruise plot measurements across the original forest footprint have contributed to understanding forest composition, stocking, growth, and productivity, species migration over time, tree quality, and coarse woody debris characteristics among others. Habitat studies in managed stands investigate: songbird breeding and post-fledging habitat; raptor (northern goshawk, barred owl, and northern saw-whet owl) utilization; terrestrial salamander distribution; forest bat utilization; small mammal occurrence and abundance.

Science Delivery

Users of BEF findings include forestry practitioners, researchers, landowners, students, policy makers, and the public. Research results are shared through forest tours, demonstration areas, presentations, and publications. Given BEF's long-term research history, there is considerable local, regional, national, and international interest in visiting these study areas to compare and contrast these management alternatives and integrated silviculture/wildlife habitat practices. Technology transfer is a major BEF program component with numerous workshops and tours annually.



BEF single-tree selection.
Photo by Mariko Yamasaki, U.S. Forest Service.